Product Specification

24-Port Gigabit with 4 Optional 10G slots
Layer 3 Managed Stackable Switch

XGS3-24042

Version 1.0

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Change History:

Revision:	Date:	Author:	Change List
Version 0.9	2011/12/12	Neo Tsai	Draft Version
Version 1.0	2011/12/26	Neo Tsai	Initial Release

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1. PRODUCT DESCRIPTION

PLANET XGS3-24042 switch is 10GbE Ethernet routing switch. The XGS3-24042 has 24 fixed 10/100/1000Mbps ports with 4 shard 1000Base-SX/LX SFP slots, 2 10GbE SFP+ module slots. The XGS3-24042 switch is based on 10GbE switching technology and fully supports IPv6, whereas their height is only 1U. As distribution layer switches which are featured in high performance, small size and flexibility, XGS3-24042 switch with advanced intelligent and secure features, can serve ideally as distribution layer switches for campus networks, enterprise networks and IP metropolitan networks; as well as core layer switches for small and medium-sized networks.

Support 10Gb Ethernet

10Gb Ethernet which adopts full-duplex technology instead of low-speed, half-duplex CSMA/CD protocol, is a big leap in the evolution of Ethernet. 10Gb Ethernet can be deployed in star or ring topologies. With 10Gb Ethernet, XGS3-24042 switch provide broad bandwidth and powerful processing capacity. It is suitable for metropolitan networks and wide area networks. Using XGS3-24042 switch, users can simplify network structures and reduce cost of network construction.

Networking Protocols

XGS3-24042 switch support 802.1d/w/s, 802.1Q, 802.1p, 802.3ad, 802.3x, GVRP, DHCP and SNTP etc. The switches also support comprehensively the multicast protocols such as IGMP, DVMRP and PIM. Moreover, XGS3-24042 switch support RIPv1/2, OSPF and IPv6. All these protocols supported enable XGS3-24042 switch to meet the requirements of complex network constructions.

Secure Power Supply

XGS3-24042 switch provide AC/DC power redundancy. XGS3-24042 can be deployed with 100~220V AC power input, -48V DC power input or 100~220V AC power/-48V DC power input simultaneously.

ACL

XGS3-24042series switch support comprehensively ACL policies. The traffic can be classified by source/destination IP addresses, source/destination MAC addresses, IP protocols, TCP/UDP, IP precedence, time ranges and ToS. And various policies can be conducted to forward the traffic. By implementing ACL policies, users can filter the virus packets such as “Worm.Blaster”, “Worm.Sasser” and “Red Code” etc. XGS3-24042 switch also support IEEE802.1x port based access authentication, which can be deployed with RADIUS, to ensure the port level security and block illegal users.

QoS

XGS3-24042 switch fully support DiffServ Module. Users can specify a queue bandwidth on each port. WRR/SP/SWRR scheduling is also supported. XGS3-24042 supports the port security. Users can deploy trusted CoS, DSCP, IP precedence and port priority. User can also modify packets' DSCP and COS values. The traffic can be classified by port, VLAN, DSCP, IP precedence and ACL table. User can also modify packets' DSCP and IP precedence values. Users can specify different bandwidths for voice/data/video to customize different qualities of service.

Perfect Web Management.

XGS3-24042 support SNMP, In-band and Out-of band Management, CLI and WEB interface and RMON. It can mail the correlative sensitive information to the administrator abide by SMTP protocol. XGS3-24042 support SSH protocol, ensure the configuration management security of the switch.

2. PRODUCT FEATURES

- **Physical Port**
  - ☐ **24-Port 10/100/1000Base-T** RJ-45 copper
  - ☐ **4 1000Base-SX/LX mini-GBIC/SFP slots**, shared with Port-21 to Port-24.
  - ☐ **2 10G module slots**, support up to **4 10G SFP+ transceivers**
  - ☐ **1 RJ-45 serial** console interface for Switch basic management and setup

- **IP Stacking**
  - ☐ IP stacking technology, connect with stack member via both Gigabit TP/SFP or 10G SFP+ interface
  - ☐ Single IP address management, supports up to **24 units** stacking together.

- **IP Routing Features**
  - ☐ IP Routing protocol supports RIP v1/v2, OSPF v2/v3, BGP4/4+
  - ☐ Routing interface provides Per-Port routing and VLAN routing mode
  - ☐ VRRP v1/v3 protocol for redundant routing deploy
  - ☐ Supports route redistribution

- **Multicast Routing Features**
  - ☐ Supports PIM-DM (Protocol Independent Multicast - Dense Mode), PIM-SM (Protocol Independent Multicast - Sparse Mode) and PIM-SSM (Protocol Independent Multicast – Source Specific Multicast)
  - ☐ Supports DVMRP(Distance Vector Multicast Routing Protocol)
  - ☐ Supports IGMP v1/v2/v3 and MLD v1/v2

- **Layer 2 Features**
  - ☐ Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z Gigabit Ethernet standard
  - ☐ Supports Auto-negotiation and half duplex/full duplex modes for all 10Base-T/100Base-TX and 1000Base-T ports.

- ☐ Auto-MDI/MDI-X detection for each RJ-45 port
- ☐ Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- ☐ High performance of Store-and-Forward architecture, broadcast storm control and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- ☐ 16K MAC address table, automatic source address learning and ageing
- ☐ Support VLAN
  - IEEE 802.1Q Tagged VLAN
  - Up to 4K VLANs groups, out of 4096 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - GVRP protocol for VLAN Management
  - Private VLAN Edge (PVE)
  - Voice VLAN
  - MAC-based VLAN
  - Protocol-based VLAN
- ☐ Support Spanning Tree Protocol
  - STP, IEEE 802.1d (Spanning Tree Protocol)
  - RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)
  - MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
  - Root Guard
  - BPDU Guard
- ☐ Support Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (Static Trunk)
  - Maximum 128 trunk groups, up to 8 ports per trunk group
  - Up to 16Gbps bandwidth(Duplex Mode)
- ☐ Provide Port Mirror (many-to-1)
- ☐ Port Mirroring to monitor the incoming or outgoing traffic on a particular port

➢ **Quality of Service**

- ☐ 8 priority queues on all switch ports.
- ☐ Supports for strict priority and weighted round robin (WRR) CoS policies
- ☐ Ingress Shaper and Egress Rate Limit per port bandwidth control
- ☐ Traffic-policing policies based on application

➢ **Multicast**

- ☐ Supports IGMP Snooping v1, v2 and v3
- ☐ Support MLD Snooping v1 and v2
- ☐ Querier mode support
- ☐ MVR (Multicast VLAN Registration)

- **Security**
  - ☐ IEEE 802.1x Port-Based network access authentication
  - ☐ MAC-Based network access authentication
  - ☐ IP-Based Access Control List (ACL)
  - ☐ MAC-Based Access Control List
  - ☐ Static MAC
  - ☐ MAC address binding & filter
  - ☐ ARP inspection to defense ARP-DOS attack and address clone
  - ☐ Support URPF to avoid IP address clone

- **Management**
  - ☐ WEB-based, Telnet, Console Command Line management
  - ☐ SSH(Secure Shell), SSL
  - ☐ Accesses through SNMPv1, v2c and v3 security set and get requests.
  - ☐ Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
  - ☐ Built-in Trivial File Transfer Protocol (TFTP) client
  - ☐ BOOTP and DHCP for IP address assignment
  - ☐ Firmware upload/download via HTTP / TFTP
  - ☐ SNTP (Simple Network Time Protocol) & NTP
  - ☐ LLDP Protocol

- **Redundant Power System**
  - ☐ 100~240V AC / -48V DC Dual power redundant

3. PRODUCT SPECIFICATION

3.1 MAIN COMPONENT

Switch ASIC:	Broadcom BCM56314	X1
Giga PHY:	Marvell 88E1340	X6
CPU:	ARM 600M	X1
Flash:	16MB	X 2
SDRAM:	256Mbit	X 2
Open frame power supply:	AD840M12-1N4	X 1

3.2 FUNCTION SPECIFICATION

Product	**XGS3-24042**
Hardware Specification	
Copper Ports	24 10/ 100/1000Base-T RJ-45 Auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	4 SFP slots, 1000Base-SX/LX SFP transceiver compatible Shared with Port-21 to Port-24
Expansion Slots	2 slots for PLANET XGS3-2SFP+, 2-Port 10G SFP+ optic module Support module Hot-swappable
Switch Processing Scheme	Store-and-Forward
Switch Fabric	128Gbps
Throughput	95Mpps@64Bytes
Address Table	16K entries
Share data Buffer	1.5Mbytes
VLAN Table	4K
ACL Table	4K
Routing Table	13K
Layer 3 Interface	1K
Port Queues	8
Flow Control	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex
Jumbo Frame	9Kbytes
LED	System: Power, SYS diagnostic, Redundant Power, Alert Malfunction Ports: 10/100/1000 Link/Act, SFP+ Link/Act
IPv4 Layer 3 functions	
IP Routing Protocol	Static Route, RIPv1/v2, OSPFv2, BGP4 Policy-Based Routing (PBR) LPM Routing (MD5 authentication)
Multicast Routing Protocol	IGMP v1 / 2 / 3, DVMRP, PIM-DM/SM, PIM-SSM
Layer 3 Protocol	VRRP v1/v3, ARP, ARP Proxy
Routing Interface	Per VLAN
IPv6 Layer 3 functions	
IP Routing Protocol	RIPng, OSPFv3, BGP4+ Policy-Based Routing (PBR)

Multicast Routing Protocol	PIM-SM/DM for IPv6 MLD for IPv6 MLDv1/v2 MLD Snooping, 6 to 4 Tunnels Multicast receive control Illegal multicast source detect
Layer 3 Protocol	Configured Tunnels , ISATAP, CIDR
Layer 2 function	
Port configuration	Port disable/enable. Auto-negotiation 10/100/1000Mbps full and half duplex mode selection. Bandwidth control on each port Port Loopback detect
VLAN	802.1Q Tagged Based VLAN ,up to 4K VLAN groups Q-in-Q GVRP Private VLAN Voice VLAN MAC-based VLAN Protocol-based VLAN
Spanning Tree Protocol	STP, IEEE 802.1d (Spanning Tree Protocol) RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol) MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN) Root Guard BPDU Guard
Link Aggregation	Static Trunk IEEE 802.3ad LACP Support 128 groups of 8-Port trunk support
QoS	Traffic classification based, Strict priority and WRR 8-level priority for switching - Port Number - 802.1p priority - DSCP/TOS field in IP Packet Policy-based DiffServ
Multicast	IGMP v1/ v2 / v3 Snooping IGMP Proxy IGMP Querier mode support MLDv1 / v2, MLD v1/v2 Snooping
Access Control List	Support Standard and Expanded ACL IP-Based ACL / MAC-Based ACL

	Time-Based ACL ACL Pool can be used for QoS classification Up to 4K entries
Security	Support MAC+ port binding IPv4 / IPv6 + MAC+ port binding IPv4 / IPv6 + port binding Support MAC filter ARP Spoofing Prevention ARP Scanning Prevention IP Source Guard
Authentication	IEEE 802.1x Port-Based network access control AAA Authentication: IPv4/IPv6 over RADIUS
SNMP MIBs	RFC-1213 MIB-II IF-MIB RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2674 Extended Bridge MIB RFC-2819 RMON MIB (Group 1, 2, 3 and 9) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2933 IGMP-STD-MIB RFC3411 SNMP-Frameworks-MIB IEEE802.1X PAE LLDP MAU-MIB
Management Function	
System Configuration	Console, Telnet, SSH, Web Browser, SSL, SNMPv1, v2c and v3
Management	Support the unite for IPv4/IPv6 HTTP and SSL Support the user IP security inspection for IPv4/IPv6 SNMP Support MIB and TRAP Support IPv4/IPv6 FTP/TFTP Support IPv4/IPv6 NTP Support RMOM 1, 2, 3, 9 four group Support the RADIUS authentication for IPv4/IPv6 telnet user name and password Support IPv4/IPv6 SSH The right configuration for users can adopt radius server's shell management Support the function for timing-reset bases needs Support CLI, support Console（RS-232）, support Telnet Support SNMPv1/v2c/v3 Support Security IP safety net management function：avoid to unlawful landing at nonrestrictive area. Support TACACS+

Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3ae 10 Gigabit Ethernet IEEE 802.3x Flow Control and Back pressure IEEE 802.3ad Port trunk with LACP IEEE 802.1d Spanning tree protocol IEEE 802.1w Rapid spanning tree protocol IEEE 802.1s Multiple spanning tree protocol IEEE 802.1p Class of service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP

3.3 PHYSICAL SPECIFICATIONS:

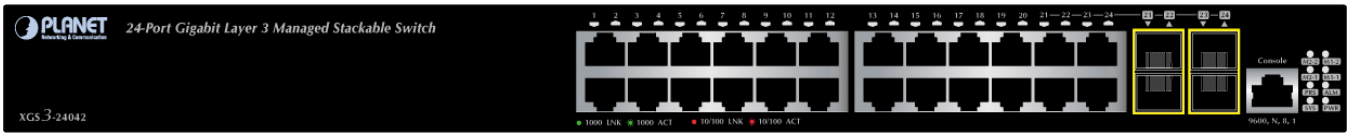
Dimensions:

415 x 325 x 44.5mm (W x D x H), 1U height

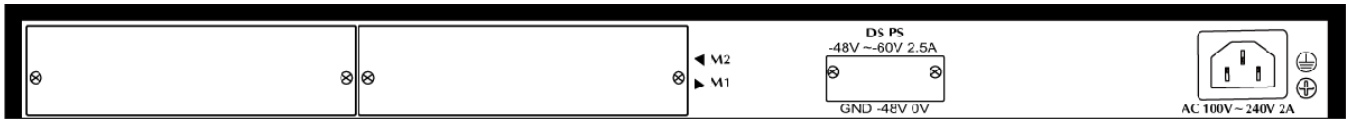
Weight:

4.3kg

■ **Front Panel:**



■ **Rear Panel:**



■ LED definition

XGS3-24042 LED panel

■ System

LED	Color	Function
PWR	**Green**	**Lights** to indicate that the Switch has power.
	Off	Power is off.
SYS	**Green**	Light to indicate that the system is operating normally.
		Blink to indicate that the system is loading.
ALM	**Green**	System is malfunctioning
	Off	System is operating normally
RPS	**Green**	Redundancy power unit is using
	Off	Redundancy power unit is off
M1-1 ~ M2-2	**Green**	**Lights** to indicate the 10G port is at link state
		Blink to indicate 10G port is receiving or sending the data
	Orange	10G port is not at link state, but transceiver is in place
	Off	10G port is not at link state

■ 10/100/1000Base-T and SFP interfaces

LED	Color	Function
LNK/ACT	**Green**	**Lights:** To indicate the link through that port is successfully established
		Blink: To indicate that the switch is actively sending or receiving data over that port.
	Off	No flow go through the port

3.4 ENVIRONMENTAL SPECIFICATION

Operating:

Temperature: 0 ~ 50 degree C

Relative Humidity: 5% ~ 90% (non-condensing)

Storage:

Temperature: -10 ~ 70 degree C

Relative Humidity: 5% ~ 90% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

AC / DC dual power supplies :	Supports Power Redundant
AC Power Input Voltage:	100 ~ 240VAC, 50 / 60Hz, Auto-sensing.
DC Power Input Voltage:	-48V DC @ 7A
Power Consumption(System on):	110V: **24.3** Watts
	220V: **26.7** Watts
Power Consumption(Full Load):	110V: **71.8** Watts
	220V: **79** Watts

3.6 REGULATORY COMPLIANCE

FCC Class A, CE.

3.7 REALIABILITY

MTBF > 50,000 hrs @ 25 Degree C

3.8 BASIC PACKAGING

■ XGSW-24042 Switch	X1
■ User's manual	X1
■ Quick Installation Guide	X1
■ Power Cord	X1
■ RJ-45-to-DB9 console cable	X1
■ SFP dust caps	X4
■ Rubber fee	X4
■ Two rack-mounting brackets with attachment screws	X2

3.9 PACKING DIMENSION

Dimension:	570mm (W) x 531mm (D) x 477mm (H)
Weight:	< TBD> kg (Gross Weight)
	3 pcs in one carton